

Notice of Allowability

Application No.

10/607,554

Examiner

Courtney Thomas

Applicant(s)

CLAUS ET AL.

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to 6/25/03.
2. ☒ The allowed claim(s) is/are 1-39.
3. ☒ The drawings filed on 25 June 2003 are accepted by the Examiner.
4. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
 - a) ☐ All b) ☐ Some* c) ☐ None of the:
 1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

* Certified copies not received: _____.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.
THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.

5. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
 6. ☐ CORRECTED DRAWINGS (as "replacement sheets") must be submitted.
 - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review (PTO-948) attached
 - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date _____.
 - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date _____.
- Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
7. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

Attachment(s)

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☒ Information Disclosure Statements (PTO-1449 or PTO/SB/08),
Paper No./Mail Date _____
4. ☐ Examiner's Comment Regarding Requirement for Deposit
of Biological Material
5. ☐ Notice of Informal Patent Application (PTO-152)
6. ☐ Interview Summary (PTO-413),
Paper No./Mail Date _____
7. ☐ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other _____

DETAILED ACTION

Allowable Subject Matter

1. Claims 1-39 are allowed.
2. The following is an examiner's statement of reasons for allowance:
3. **As per claim 1 and dependent claims 2-13**, the examiner found no reference in the prior art that disclosed or made obvious a method of determining geometry of a tomosynthesis system comprising the steps of: identifying at least two markers within an imaged volume, the at least two markers being placed at different relative distances between a detector and X-ray source, having projections located on a straight line for all different source positions and locating the projections of the markers within at least two acquired images of the imaged volume, the at least two images corresponding to different positions of a focal spot of the X-ray source, as recited in independent claim 1.
4. **As per claim 14 and dependent claims 15-26**, the examiner found no reference in the prior art that disclosed or made obvious a tomosynthesis system comprising a computer configured to execute processes to determine a geometry of the tomosynthesis system, wherein: at least two markers within an imaged volume are identified, the at least two markers being placed at different relative distances between a detector and X-ray source, having projections located on a straight line for all different source positions and locating the projections of the markers within at least two acquired images of the imaged volume, the at least two images corresponding to different positions of a focal spot of the X-ray source, as recited in independent claim 14.

5. **As per claim 27 and dependent claims 28-37**, the examiner found no reference in the prior art that disclosed or made obvious a computer readable medium storing a program determining a geometry of a tomosynthesis system ... the program, when executed by a computer causes the computer to execute processes comprising the steps of: locating the projections of the markers within at least two acquired images of the imaged volume, the at least two images corresponding to different positions of a focal spot of the X-ray source, as recited in independent claim 27.

6. **As per claim 38**, the examiner found no reference in the prior art that disclosed or made obvious a method of determining a geometry of a tomosynthesis system comprising the steps of: locating projections of markers wherein the markers are identified at different relative distances between a detector and X-ray source; drawing logic lines through pairs of locations of projections; determining points of intersection of these lines in a detector plane and determining points in three dimensional space, wherein the logic lines drawn through the pairs of points intersect a detector plane at predetermined points in the detector plane, as recited in independent claim 38.

7. **As per claim 39**, the examiner found no reference in the prior art that disclosed or made obvious a tomosynthesis system comprising a computer configured to execute processes determining a geometry of the tomosynthesis system wherein: projections of markers are located, the markers being identified at different relative distances between a detector and X-ray source; logic lines are drawn through pairs of locations of projections; points of intersection of these lines in a detector plane and points in three dimensional space are determined, wherein the logic

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lines drawn through the pairs of said points intersect a detector plane at predetermined points in the detector plane, as recited in independent claim 39.

8. Any comments considered necessary by applicant must be submitted no later than the payment of the issue fee and, to avoid processing delays, should preferably accompany the issue fee. Such submissions should be clearly labeled "Comments on Statement of Reasons for Allowance."

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

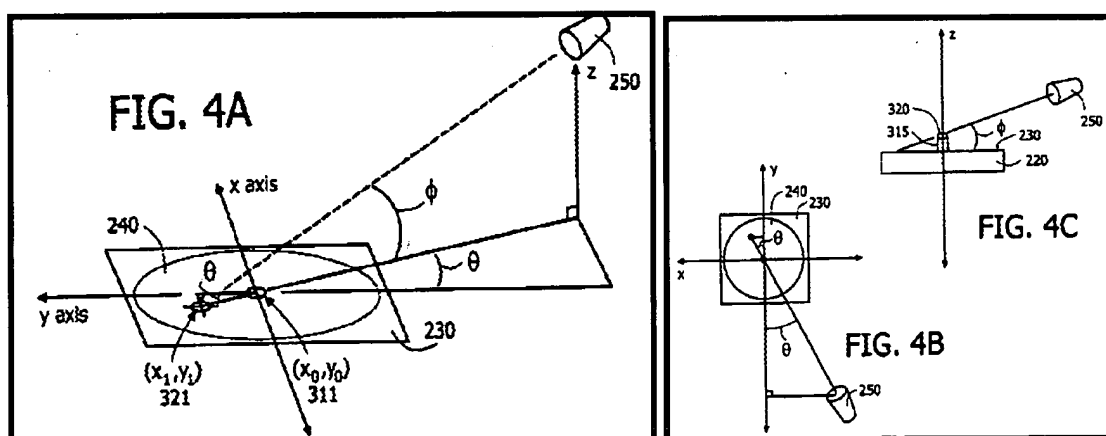


Figure 1 Figures 4A-4C – U.S. Patent 6,671,349 to Griffith

11. U.S. Patent 6,671,349 to Griffith discloses a method and apparatus of registering or calibrating a tomosynthesis system. In particular, invention is directed to a rapid and accurate method of registering an energy source to a sensor surface in a tomosynthesis system.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Courtney Thomas whose telephone number is (571) 272-2496. The examiner can normally be reached on M - F (9 am - 5 pm).

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ed Glick can be reached on (571) 272 2490. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Courtney Thomas *CT*
Examiner
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EDWARD J. GLICK
SUPERVISORY PATENT EXAMINER